WASHCOUNTS

2026 State Competition
Team Round Problems 1–10

School _____

Chapter _____

Team Members _____ , Captain

_____

_____

_____

DO NOT BEGIN UNTIL YOU ARE INSTRUCTED TO DO SO.

This section of the competition consists of 10 problems which the team has 20 minutes to complete. Team members may work together in any way to solve the problems. Team members may talk to each other during this section of the competition. This round assumes the use of calculators, and calculations also may be done on scratch paper, but no other aids are allowed. All answers must be complete, legible and simplified to lowest terms. The team captain must record the team's official answers on his/her own competition booklet, which is the only booklet that will be scored. If the team completes the problems before time is called, use the remaining time to check your answers.

Total Correct	Scorer's Initials

Problem Development Committee

Kaiyuan Mao ▪ Ryan Tang ▪ Wesley Wu ▪ Vivaan Mukherjee ▪ Alex Yang

Problem Authors

James Yang ▪ Laura Wang ▪ Hanbin Wang ▪ Jaelyn Park ▪ Elynna Wu
William Xin ▪ Patrick Sun ▪ Bruce Shu ▪ Ryan Chen

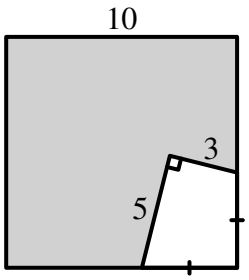
Special thanks to Jason Lee for providing the competition templates.

1. _____ %

Riley is arranging a bouquet containing carnations, poppies, daisies, and roses. There are twice as many carnations as roses, two more daisies than carnations, and one fewer poppy than roses. If the bouquet contains 25 flowers in total, what percent of the flowers are daisies?

2. _____ in^2

A square slice of cheese with side length 10 inches has a wedge cut from one corner. The two cuts forming the wedge measure 3 inches and 5 inches and meet at a right angle, and the removed piece has two congruent sides. What is the area of the remaining cheese?



3. _____ ways

A chef has four distinct pans and four distinct burners on a stove. In how many ways can the chef place the pans on the burners if each burner can hold at most one pan and it is allowed that no pans are placed?

4. _____ sequences

How many sequences of at least two consecutive positive multiples of 3 have a sum of 81?

5. _____ placements

Two identical 3×3 squares are placed on an 8×8 grid with the sides parallel to the grid lines. If their overlap is exactly a 2×2 square, how many distinct placements are possible? Two placements are the same if swapping the squares produces the same configuration.

6. _____ meters

Jack stands at the origin of an xy-plane, with distances measured in meters. His drone begins at $(0, 8)$ and rises 1 meter for every 2 meters it moves to the right. Dave throws a stone whose path is modeled by $y = -\frac{x^2}{4} + 5x$. The stone intersects the drone's path at two points. What is the distance between them? Express your answer in simplest radical form.

7. _____

A cube has side length 15. From each of its eight vertices, a smaller cube is removed. The side lengths of the removed cubes are 1, 2, 3, 4, 5, 6, 7, and 8, with one cube removed at each vertex. What is the minimum possible surface area of the resulting solid?

8. _____ multiples

A positive integer is called *7fraid* if its distance from every multiple of 7 is greater than 1. How many multiples of 6 less than 1000 are 7fraid?

9. _____

What is the value of

$$\frac{1}{\sqrt{1+\sqrt{1^2-\frac{1}{4}}}}+\frac{1}{\sqrt{2+\sqrt{2^2-\frac{1}{4}}}}+\cdots+\frac{1}{\sqrt{100+\sqrt{100^2-\frac{1}{4}}}}?$$

Express your answer in simplest radical form.

10. _____ cm^3

A square pyramid has base side length 6 cm and height 4 cm. It is placed so that it rests on one of its triangular faces. Water is poured into the pyramid until the water reaches a height of 4 cm in this orientation. What is the volume of the water? Express your answer as a common fraction.